SUBCHAPTER G : CONSIDERATION PRIOR TO PERMIT ISSUANCE
Effective April 28, 1997
§§331.121-331.331.22

§331.121. Class I Wells.

(a) The commission shall consider the following before issuing a Class I Injection Well Permit:

(1) (No change.)

(2) all information in the Technical Report submitted with the application for permit in conformance with Chapter 305 of this title (relating to Consolidated Permits) including, but not limited to:

(A) a map showing the location of the injection well for which a permit is sought and the applicable area of review. Within the area of review, the map must show the number, or name, and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells and other pertinent surface features including residences and roads. The map should also show faults, if known or suspected. Only information of public record is required to be included on this map;

(B) a tabulation of all wells within the area of review which penetrate the injection zone or confining zone, and for salt cavern disposal wells, the salt cavern injection zone, salt cavern confining zone and caprock. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of plugging and/or completion, and any additional information the executive director may require;

(C) the protocol followed to identify, locate and ascertain the condition of abandoned wells within the area of review which penetrate the injection or the confining zones;

(D) maps and cross-sections indicating the general vertical and lateral limits of USDWs and freshwater aquifers, their positions relative to the injection formation and the direction of water movement, where known, in each USDW or freshwater aquifer which may be affected by the proposed injection;

(E) maps, cross-sections and description of the geologic structure of the local area;

(F) maps, cross-sections, and description of the regional geologic setting;

(G) proposed operating data:

(i) average and maximum daily injection rate and volume of the fluid or waste to be injected over the anticipated life of the injection well;

(ii) average and maximum injection pressure;

(iii) source of the waste streams;

(iv) an analysis of the chemical and physical characteristics of the waste streams;

(v) for salt cavern waste disposal, the bulk waste density, permeability, porosity, and compaction rate, as well as the individual physical characteristics of the wastes and transporting media;

(vi) for salt cavern waste disposal, the results of tests performed on the waste to demonstrate that the waste will remain solid under cavern conditions; and

(vii) any additional analyses which the executive director may reasonably require.

(H) proposed formation testing program to obtain an analysis of the chemical, physical, and radiological characteristics of formation fluids and, other information on the injection zone and confining zone;

(I) proposed stimulation program, if needed;

(J) proposed operation and injection procedures;

(K) engineering drawings of the surface and subsurface construction details of the system;

(L) contingency plans, based on a reasonable worst case scenario, to cope with all shut-ins; loss of cavern integrity, or well failures so as to prevent migration of fluid into any USDW;

(M) plans (including maps) for meeting the monitoring requirements of this chapter, such plans shall include all parameters, test methods, sample methods, and quality assurance procedures necessary and used to meet these requirements;

(N) for wells within the area of review which penetrate the injection zone or confining zone but are not adequately constructed, completed or plugged, the corrective action proposed to be taken;

(O) construction procedures including a cementing and casing program, contingency cementing plan for managing lost circulation zones and other adverse subsurface conditions, well materials specifications and their life expectancy, logging procedures, deviation checks, and a drilling, testing, and coring program.

(P) delineation of all faults within the area of review, together with a demonstration, unless previously demonstrated to the commission or to the U.S. Environmental Protection Agency, that the

fault is not sufficiently transmissive or vertically extensive to allow migration of hazardous constituents out of the injection zone.

(3) whether the applicant will assure, in accordance with §§331.141-331.147 of this title (relating to Financial Responsibility), through a performance bond or other appropriate means, the resources necessary to close, plug or abandon the well and/or waste disposal cavern as required.

(4) the closure plan, corrective action plan, and post-closure plan submitted in the Technical Report accompanying the permit application.

(5) any additional information required by the executive director for the evaluation of the proposed injection well.

(b) In determining whether the use or installation of an injection well for the disposal of hazardous waste is in the public interest under §27.051(a)(1) of the Texas Water Code, the Commission shall also consider:

(1) the compliance history of the applicant in accordance with §27.051(e) of the Texas Water Code and §281.21 of this title (relating to Draft Permit and Compliance Summary);

(2) whether there is a practical, economic and feasible alternative to an injection well reasonably available to manage the types and classes of hazardous waste;

(3) whether the applicant will maintain significant public liability insurance for bodily injury and property damage to third parties that is caused by sudden and non-sudden accidents or will otherwise demonstrate financial responsibility in a manner adopted by the Commission in lieu of public liability insurance. A liability insurance policy which satisfies the requirements of 40 Code of Federal Regulations §264.147 shall be deemed "sufficient" under this paragraph if the policy also covers the injection well; and

(4) that any permit issued for a Class I injection well for disposal of wastes generated on-site requires a certification by the owner or operator that:

(A) the generator of the waste has a program to reduce the volume or quantity and toxicity of such waste to the degree determined by the generator to economically practicable; and

(B) injection of the waste is that practicable method of disposal currently available to the generator which minimizes the present and future threat to human health and the environment.

(c) The commission shall consider the following minimum criteria for siting before issuing a Class I injection well permit:

(1) All Class I injection wells shall be sited such that they inject into a formation that is beneath the lowermost formation containing within one quarter mile of the wellbore a USDW or freshwater aquifer.

(2) The siting of Class I injection wells shall be limited to areas that are geologically suitable. The executive director shall determine geologic suitability based upon:

(A) an analysis of the structural and stratigraphic geology, the hydrogeology, and the seismicity of the region;

(B) an analysis of the local geology and hydrogeology of the well site, including, at a minimum, detailed information regarding stratigraphy, structure, and rock properties, aquifer hydrodynamics and mineral resources; and

(C) a determination that the geology of the area can be described confidently and that limits of waste fate and transport can be accurately predicted through the use of analytical and numerical models.

(3) Class I injection wells shall be sited such that:

(A) the injection zone has sufficient permeability, porosity, thickness, and aerial extent to prevent migration of fluids into USDWs or freshwater aquifers.

(B) the confining zone:

(i) is laterally continuous and free of transecting, transmissive faults or fractures over an area sufficient to prevent the movement of fluids into a USDW or freshwater aquifer; and

(ii) contains at least one formation of sufficient thickness and with lithologic and stress characteristics capable of preventing initiation and/or propagation of fractures.

(4) The owner or operator shall demonstrate to the satisfaction of the executive director that:

(A) the confining zone is separated from the base of the lowermost USDW or freshwater aquifer by at least one sequence of permeable and less permeable strata that will provide an added layer of protection for the USDW or freshwater aquifer in the event of fluid movement in an unlocated borehole or transmissive fault; or

(B) within the area of review, the piezometric surface of the fluid in the injection zone is less than the piezometric surface of the lowermost USDW or freshwater aquifer, considering density effects, injection pressures, and any significant pumping in the overlying USDW or freshwater aquifer; or

(C) there is no USDW or freshwater aquifer present.

(D) the commission may approve a site which does not meet the requirements in paragraphs (4) (A), (B), or (C) of this section if the owner or operator can demonstrate to the commission that because of the geology, nature of the waste, or other considerations, that abandoned boreholes or other conduits would not cause endangerment of USDWs, and fresh or surface water.

(d) The commission shall also consider the following additional criteria, which must be addressed in the technical report of the application, before issuing a salt cavern Class I injection well permit:

(1) geologic suitability of the location:

(A) a thorough geologic characterization of the salt dome, including the geometry of the salt stock and its calculated movement and calculated salt loss rate. Data submitted must be sufficient to image underneath all overhangs, to delineate the edge of the salt stock, to define any other caverns or co-uses of the salt stock, and to address any conditions that may result in potential adverse impact on the salt stock. Well logs, seismic reflection surveys, gravity surveys, and any other appropriate geophysical methods necessary to characterize the salt dome are to be utilized. Seismic reflection data submitted must include a surface recorded three-dimensional seismic grid survey sufficient to image underneath all suspected overhangs and to delineate the edge of the stock.

(B) any unusual features, such as depressions or lineations observable at the land surface or within or detectable within the subsurface, which may be indicative of underlying anomalies in the cap rock or salt stock, which might affect construction, operation, or closure of the cavern;

(C) the petrology of the caprock, salt stock, and deformed strata; and

(D) for strata surrounding the salt stock, information on their nature, structure, hydrodynamic properties, and relationships to USDWs, including a demonstration that the proposed salt cavern injection zone will not be in or above a formation which within 1/4 mile of the salt cavern injection zone contains a USDW.

(2) establishment of a pre-development baseline for subsidence and groundwater monitoring, over the area of review;

(3) characterization of the predicted impact of the proposed operations on the salt stock, specifically the extent of the disturbed zone;

(4) demonstration of adequate separation between the outer limits of the injection zone and any other activities in the domal area. The thickness of the disturbed zone, as well as any additional safety factors will be taken into consideration; and

(5) the commission will consider the presence of salt cavern storage activities, sulfur mining, salt mining, brine production, oil and gas activity, and any other activity which may adversely affect or be affected by waste disposal in a salt cavern.

(e) Information Requirements for Class I Hazardous Waste Injection Well Permits.

(1) The following information is required for each active Class I hazardous waste injection well at a facility seeking a underground injection control permit:

(A) dates well was operated; and

(B) specification of all wastes that have been injected in the well, if available.

(2) The owner or operator of any facility containing one or more active hazardous waste injection wells must submit all available information pertaining to any release of hazardous waste or constituents from any active hazardous waste injection well at the facility.

(3) The owner or operator of any facility containing one or more active Class I hazardous waste injection wells must conduct such preliminary site investigations as are necessary to determine whether a release is occurring, has occurred, or is likely to have occurred.

(f) Interim Status under the Resource Conservation and Recovery Act (RCRA) for Class I hazardous waste injection wells. The minimum state standards which define acceptable injection of hazardous waste during the period of interim status are set out in this chapter. The issuance of an underground injection well permit does not automatically terminate RCRA interim status. A Class I well's interim status does, however, automatically terminate upon issuance to that well of a RCRA permit, or upon the well's receiving a RCRA permit-by-rule under §335.47 of this title (relating to Special Requirements for Persons Eligible for a Federal Permit by Rule). Thus, until a Class I well injecting hazardous waste receives a RCRA permit or RCRA permit-by-rule, the well's interim status requirements are the applicable requirements imposed under this chapter, including any requirements imposed in the UIC permit.

(g) Before issuing a permit for a hazardous waste injection well in a solution-mined salt dome cavern, the commission by order must find that there is an urgent public necessity for the hazardous waste injection well. The commission, in determining whether an urgent public necessity exists for the permitting of the hazardous waste injection well in a solution-mined salt dome cavern, must find that:

(1) the injection well will be designed, constructed, and operated in a manner that provides at least the same degree of safety as required of other currently operating hazardous waste disposal technologies;

(2) consistent with the need and desire to manage the state hazardous wastes generated in the state, there is a substantial or obvious public need for additional hazardous waste disposal capacity and the hazardous waste injection well will contribute additional capacity toward servicing that need;

(3) that the injection well will be constructed and operated in a manner so as to safeguard public health and welfare and protect physical property and the environment;

(4) the applicant has demonstrated that groundwater and surface waters, including public water supplies, will be protected from the release of hazardous waste from the salt dome waste containment cavern; and

(5) any other criteria required by the commission to satisfy that the test of urgency has been met.

§331.122. Class III Wells.

The commission shall consider the following before issuing a Class III Injection Well or Area Permit:

(l) All information in the completed application for permit.

(2) all information in the Technical Report submitted with the application for permit, including the following:

(A) a map showing the injection well(s) and area for which the permit is sought and the applicable area of review. Within the area of review, the map must show the number, or name, and location of all existing producing wells, injection wells, dry holes, surface bodies of water, mines (surface and subsurface), quarries, public water systems, water wells, and other pertinent surface features including residences and roads. The map should also show faults, if known or suspected. Only information of public record is required to be on this map. If production area authorizations are required prior to the commencement of mining, the proposed production areas must be shown on the map;

(B) a tabulation of reasonably available data on all wells within the area of review which penetrate the proposed injection zone. This data shall include a description of each well's type, construction, date drilled, location, depth, record of plugging and completion, and any additional information the executive director may require;

(C) maps and cross-sections indicating the vertical and lateral limits of those aquifers within the area of review that contain water with less than 10,000 mg/liter TDS, their position relative to the injection formation, and the direction of water movement.

(D) maps and cross-sections detailing the geologic structure of the local area;

(E) generalized map and cross-sections illustrating the regional geologic setting;

(F) proposed operating data:

(i) average and maximum daily rate and volume of fluid to be injected;

(ii) average and maximum injection pressure;

(iii) source of the injection fluids; and

(iv) analysis as needed of the chemical, physical, and radiological characteristics of the injection fluids.

(G) proposed formation testing program to obtain an analysis of the physical, chemical and radiological characteristics of the receiving formation;

(H) proposed stimulation program;

(I) proposed operation and injection procedure;

(J) engineering drawings of the surface and subsurface construction details of the system;

(K) plans (including maps) for meeting the minimum monitoring requirements of the rules;

(L) expected changes in pressure, native fluid displacement, direction of movement of injection fluid;

(M) contingency plans to cope with all shut-ins or well failures so as to prevent the migration of contaminating fluids into fresh water; and

(N) the corrective action proposed to be taken under §331.44 of this title (relating to Corrective Action Standards).

(3) whether the applicant will assure, in accordance with §§331.141-331.147 of this title (relating to Financial Responsibility), through a performance bond or other appropriate means, the resources necessary to close, plug or abandon the well;

(4) the closure plan, in accordance with §331.15 of this title (relating to Financial Assurance Required), submitted in the Technical Report accompanying the application; and

(5) Any additional information reasonably required by the executive director for the evaluation of the proposed injection well or project.

Adopted April 2, 1997 Effective April 28, 1997